



## Comanche RAH-66 — Classic Example of Simulation Based Acquisition (SBA)

The Comanche team's use of modeling and simulation tools to evaluate the physical and cognitive aspects of the Comanche cockpit is a classic example of SBA techniques. The simulations enhance user participation in the design process and support process improvement initiatives. The combination of these tools and earlier, continuous user involvement in the design process results in prompt identification and resolution of potential design problems and prevents cost and schedule impacts from significant problems found late in a program's life cycle.

The Comanche team's efforts will ensure that the EMD aircraft are ready for user testing, and will result in a far superior Comanche product at Milestone III.

**Editor's Note:** The authors welcome questions and comments on this article. Contact Chase at [chased@comanche.redstone.army.mil](mailto:chased@comanche.redstone.army.mil); Copeland at [bob.copeland@comanche.redstone.army.mil](mailto:bob.copeland@comanche.redstone.army.mil); and Ferrell at [ferrellr@comanche.redstone.army.mil](mailto:ferrellr@comanche.redstone.army.mil).

## Requirements Definition and Simulation

members of the component teams to see the same picture and limits misinterpretations of text.

### Enter the "Mockpit"

We coined the term "mockpit" to describe the virtual cockpit, which is comprised of a Silicon Graphics O2 computer and virtual prototyping software. The reusable crew station simulation code is written in C++, copied to a CD-ROM as an executable file, and mailed to each of the mockpit locations. The team can fly the Comanche crew station configuration in simulation as much as 18 to 24 months prior to its implementation into the actual aircraft.

On a larger scale, SA recently restructured its Cockpit Analysis Program into a three-phased design validation using a combination of simulation environments.

### PHASE I

In Phase I, CTT and TSM pilots evaluate individual design components using the mockpit and other virtual prototyping tools.

### PHASE II

During Phase II, the CSD team combines the individual component designs with an evaluation of the crew station design impact on human performance and aircrew workload during mission segments using CTT and TSM pilots in the Sikorsky full-motion engineering design simulator (EDS) at Stratford, Conn.

### PHASE III

Phase III, also performed in the EDS, will be a single-ship, full-mission simulation using U.S. Army Forces Command pilots as participants. It is timed to precede Force Development Test and Experimentation I, a multi-ship, full-mission event. During the first two phases of the validation process, we expect results related to crew station design. Although we expect to continue learning about the design in Phase III, the emphasis will shift to a focus on learning how to train new Comanche pilots.

## NEW COTS AND COMMERCIAL ITEM GUIDE RELEASED

**T**he new Commercial Off-the-Shelf (COTS) and Commercial Item Guide, *Commercial Item Acquisition: Considerations and Lessons Learned*, was published online July 24. Released by Assistant Secretary of Defense (Command, Control, Communications and Intelligence) Arthur L. Money, and Under Secretary of Defense (Acquisition, Technology and Logistics) Dr. Jacques S. Gansler, the Guide is designed to assist DoD consumers in acquiring and supporting commercial items.

According to both officials, "We [DoD] must expand the use of commercial items in DoD systems so we can leverage the massive technology investments of the private sector; reap the benefits of reduced cycle times; faster insertion of new technologies; lower life cycle costs; greater reliability and availability; and support from a robust industrial base ... We encourage you to learn from it and use it as you design your acquisition strategies."

**Editor's Note:** The Guide may be downloaded from the Deputy Under Secretary of Defense (Acquisition Reform) Web site at [www.acq.osd.mil/ar](http://www.acq.osd.mil/ar).